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A NUTRITION DEMONSTRATION AS A TOOL FOR TEACHER TRAINING*

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In order to meet the demands of teachers, principals, and superintendents for practical study in the field of child health problems, Child Health Conferences have been conducted in three state educational institutions in North Carolina during the past two summers. Five such conferences, three for white and two for Negro teachers, have been held, each lasting six weeks. The three institutions cooperating in this project were the University of North Carolina in Chapel Hill, the Woman's College of the University of North Carolina in Greensboro, and the North Carolina College for Negroes in Durham. To date, the conferences have been attended by a total of 225 people. The conference membership was made up of individuals selected from larger groups recommended by their local health officers and school superintendents acting jointly. Fellowships have been provided with stipends decreasing from summer to summer, and it is anticipated that after next summer, fellowships will no longer be offered. After this three-year demonstration period the conferences should be largely self-supporting. To date, funds have been provided by the General Education Board, the cooperating institutions, and the School Health Coordinating Service.

The conferences embraced the lecture, round-table, panel, and demonstration methods, with members participating in all phases. Members of the regular summer school faculties and other guest discussion leaders were from time to time invited to lead and participate in the discussions. The members of the School Health Coordinating Service staff gave their entire time to these confer-

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ences. On certain occasions, members of the state departments of Health, Education, Welfare, and other federal, state, and local agencies participated. The work was carried out according to college standards of scholarship, and appropriate certification credits and college credits were granted. In order to determine whether the conferences met the varying needs of the members attending, each one was asked to evaluate from his own point of view the work done and to offer suggestions for improving future conferences.

In order to have first-hand material upon which to work, a demonstration school (hereafter referred to as the Health Camp), consisting of thirty children, was set up. Each conference member chose a child upon whom to concentrate his study. Each child was given a thorough physical examination, tuberculin test, Schick test, X-ray of the chest, stool and urine examination, and a comprehensive blood study. The blood study was repeated at the end of the six weeks period. Those showing intestinal parasites were treated and stool specimens rechecked.

Each child's sponsor kept a weight chart, did intelligence tests, personality tests, reading tests, health knowledge tests, audiometer tests, followed the progress of the child as far as possible, and made two or three home visits with the camp nurse. The child's sponsor was present at the time the child he sponsored was examined, and various features of the examination were discussed in such a way as to avoid embarrassment to the child. In brief, the child was studied from every practical angle, and his sponsor participated in the study in every way possible. As an outgrowth of this, plans are now being discussed for setting up a child health study of this type on a year-around basis at the Woman's College of the University of North Carolina in Greensboro. Such a plan would involve the participation of the city health department and city schools, and would be utilized for teaching purposes by a number of the college departments.

Since one of our major child health problems in North Carolina is that of nutrition, this feature of the study was greatly emphasized, and further discussion here will be limited largely to this phase of the program.

We have divided the remainder of this report into two parts. First, I shall discuss the criteria which were used in estimating the nutritional status of the child, with particular emphasis on signs that may be observed by the teacher. Miss Boyd, who directed the feeding of the children, will then discuss the diet and methods used in working with children, parents, and teachers.

Part I

It is clear that in various statements indicating the prevalence of malnutrition in different areas and in selected groups, no uniform measuring rod has been employed. Obviously, this has led to widely divergent statements concerning the prevalence of malnutrition among school children. The popular idea, that the nutritional state can be judged largely on the basis of height—weight—age ratios, has led to underestimation of the importance of other signs indicating the presence of malnutrition. We have been interested in studying other common signs of malnutrition which can be observed by the lay person, especially the teacher and the parent. In observing thousands of school children in various parts of the state during the past two years, we have been impressed by the prevalence of such signs. We have found very little of the chronic type of "hollow hunger". Among the great majority of our children, the problem is one of quality rather than quantity of food. In spite of the fact that we find few chronically hungry children, signs such as the following are frequently observed:

1. signs of anemia
2. spongy gums
3. bad teeth
4. poor posture
5. chronic lassitude
6. dull eyes
7. skeletal abnormalities resulting from early rickets
8. poor appetite

In many instances further study has revealed chronic fatigue, lack of endurance, irritability, and poor sleeping habits. The vicious cycle resulting from poor food habits is frequently found.

In view of these observations and the interest displayed by numerous teachers in learning more about child nutrition problems, we studied the five groups of children showing various combinations of the above signs, as a part of a broader study of child health problems.

The children were chosen for the health camp from a larger group recommended by the local health departments. As with other aspects of the child study, each conference member studied one child very intensively, and every child in the camp to some degree from a nutritional point of view. Near the end of the conference, each sponsor reported to the entire group on the observations made on the child studied. During the course of the conference there were a number of lectures and group discussions dealing

with the fundamental principles of nutrition, and more specifically as related to the camp children. The reports from the blood studies, X-rays, and other tests were thoroughly discussed, and their significance explained. In connection with these discussions, the reasons for feeding the type diet employed were brought out. Regular informal conferences were held regarding the problems of each child and the progress that he had shown to date. The question of estimating quantitatively the improvement of the children was a difficult one, since so many of the factors were rather intangible and not easily expressed in terms of specific figures. In such cases, it was necessary to resort to simple statements regarding the changes seen. Among the more common signs noted in these children were:

1. poor posture
2. mild anemia
3. bad teeth
4. spongy gums
5. Skeletal abnormalities resulting from old rickets.

Studies of family dietary habits easily explained these findings.

In summary, our plan was this: a group of teachers, principals, superintendents, and other health and education workers studied a group of children rather comprehensively, with emphasis on the nutrition problems and what could be done about them. Such study was carried out with the aid of physicians, nurses, nutritionists, a child psychologist, health education and physical education advisors. Each conference member studied one child intensively, and made certain observations on all of the children. Emphasis was placed on the recognition of clinical and sub-clinical deficiencies. As Miss Boyd will point out, a further element of study was concerned with the practical use of a highly nourishing but low cost diet in improving the nutritional status of the child.

Part II

In planning the work to be done in connection with the nutrition demonstrations as a part of the program of the Child Health Conferences, we had two major objectives. The first concerned studies and observations made by each teacher regarding his own state of nutrition and of his own dietary habits; the other pertained to similar studies to be made upon a group of malnourished children, assembled in what we designated as a summer camp.

Our object in having teachers undertake a study of their own dietary habits was to create in them a very personal interest in the subject of nutrition, the thought being that once this interest was

aroused their minds would be receptive to a broadening of their knowledge in this important field. Briefly stated, each teacher kept a complete record of his own food intake for a period of seven days. The food value of the foods recorded was estimated by trained nutritionists, who were conference members. The significance of the findings was explained to each teacher in an individual conference with the nutritionist who had evaluated his diet. At the request of the teacher, the nutritionist suggested ways in which his diet could be improved.

To accomplish the second of our major objectives, we undertook:

1. To provide an opportunity for teachers attending the conference to observe and study a group of malnourished children, including study of the homes and communities from which these children came.
2. To provide an opportunity for teachers to observe the effect of improved nutrition upon malnourished children.
3. To offer teachers an opportunity to work with the parents of the children in the demonstration schools, in an effort to improve home conditions and family food habits.
4. To demonstrate that it is possible to provide a palatable, highly nutritive diet at a cost which is within the means of families with low incomes.
5. To study and demonstrate methods of developing good food habits in malnourished children.

Ample opportunity was given each teacher to become familiar with the eating habits of the children, to observe the response to methods used to improve those habits, and to give critical attention to the foods used in the diets served to the children. The procedures adopted to facilitate these studies were as follows:

1. Teachers were invited to observe the children at mealtime. They were requested to come to the dining room in small groups, to remain in the background, to refrain from talking to the children or about them, and to avoid discussion of food or eating habits while in the dining room.
2. The entire conference group was occasionally invited to have a picnic lunch or supper with the children. This offered an opportunity for the teachers to become better acquainted with the foods served to the children, and to *learn by eating* that a low cost diet can be both palatable and satisfying. Once during each camp period the parents were invited to a picnic, for the same purposes, and also to

bring about an informal parent-teacher meeting.

3. The camp teacher and dietitian kept a record of foods refused by each child. At the end of the week these records were attached to the child's chart. This gave his sponsor an opportunity to follow his progress in developing better eating habits. The camp teacher, the dietitian, and the nutritionist, were available for individual conferences with teachers who wanted further information concerning the child's eating habits or dietary problems.
4. The nutritionist also conferred with individual teachers who were concerned with plans to help improve the dietary habits of the families.

In order to study and demonstrate methods of developing good food habits in children, we felt that it was advisable to have as much control over the group as was practicable. To rule out, as completely as possible, the use by any child of foods not provided at camp, parents were asked to cooperate to the extent of sending their children to camp without breakfast and to avoid feeding them after they returned home. With occasional exceptions, parents complied with this request. While in camp, the children were served three meals a day except on Saturday and Sunday. Each camp was closed on Saturday after the noon meal and reopened Monday morning.

Children came to camp at 8 A. M. and remained until 6 P. M. Thus each child received seventeen meals a week at camp and four at home.

In planning the basic diet for the summer of 1941, we selected eight foods which the children could eat in quantities sufficient to meet dietary requirements for all foods essentials except calories. The standard used was that recommended in 1941 by the Committee on Food and Nutrition of the National Research Council.

In order to relieve the monotony of this diet, other low cost foods were used in varying amounts. In one camp, which was attended only by children from a very low income group, supplementary foods were used chiefly for seasoning and for making desserts. Occasionally another dark green or yellow vegetable was substituted for turnip greens. In spite of the use of these supplementary foods, the diet was still monotonous. However the children to whom it was given were accustomed to a diet which was both monotonous and inadequate to meet their nutritional needs. For this reason, we felt justified in using a diet which, although monotonous, met nutritional requirements and could, at the time

of the study, have been duplicated in the homes of the children at a cost to their families of 12.5 cents per child per day.

In the other two camps more supplementary foods were used, including larger amounts of milk. Foods particularly stressed in discussions of the diet with parents and teachers, were evaporated milk, whole grain breads and cereals, soy beans, and canned grapefruit juice. These foods supply, at low cost, the elements which most frequently appeared to be deficient in the diets of all groups studied. Calculated at regular retail prices, charged by chain stores in the respective towns where these two camps were held, the per capita daily food costs were 15.4 cents at one camp and 21.6 at the other. The difference in cost at these two camps was due to the increased cost of food during the latter part of the summer, and to the consumption of larger amounts of food at one camp than the other.

The method used in working with the children was quite simple. Because some of them had been described by their parents as "feeding problems" and because many of the foods served were new to them, we put a very small portion of each food on each child's plate. In fact, we gave each child about one-half the amount we expected him to eat. He was allowed to return for more of any food offered, so long as he ate some of each food served. In order to encourage the children to eat a variety of foods, they were allowed only one glass of milk at each meal and one serving of dessert.

No child was urged to eat. Instead, if a child left a certain food, this fact was noted, without the child's knowledge, and the next time *that* food was served he was given a very small portion of it. If a child said that he disliked a certain food, the teacher or dietitian of the camp, both of whom ate all meals with the children, suggested that he taste it. Often the child would eat all of the food in question and ask for more. Whenever possible, new foods, or foods not generally liked, were served at the noon meal when the children were hungry and when there was no opportunity for them to supplement food eaten at camp.

Evaporated milk, diluted with an equal amount of water, was served to all children. No flavoring was added and no attempt was made to disguise the fact that it was evaporated milk. Only whole wheat flour was used in the camps. Without exception, the children learned to like evaporated milk, whole wheat bread and cereal, and to eat some of each food served.

Parents were visited and their questions concerning the foods

used in camp were answered. At the request of parents and children, recipes for many of these foods were prepared and given them. Movies were made of all phases of camp activity, and were shown to the parents. Sample packages of soy beans containing enough to serve the family twice, were given to each family, with instructions for securing them and with recipes for preparing them.

In short, every effort was made to provide a low cost adequate diet to the camp children, to teach them to eat such a diet, to demonstrate to parents and teachers that children can be taught to eat inexpensive foods which are high in nutritive value, and to help the parents to improve the diets which they provide for their children at home.

* * * * *

Whisky Glasses,—A popular notion that it's not important to wash whisky glasses because "the alcohol kills the germs" was exploded yesterday in Magistrate Edwin N. Lindell's court, where several taproom owners were among 10 persons fined for violations of the sanitary regulations.

William J. Penze, acting supervisor of the restaurant hygiene section of the Department of Health, said a bacteria count of 150,000 to the cubic centimeter was found on a whisky glass in one taproom. The count was one of the biggest ever recorded in this city, Penze said. The maximum count allowed by the code is 200.

While Lindell was holding court, Herbert M. Packer, chief of the Division of Sanitation, was conducting classes in dish and glass washing as part of his department's drive to protect the public health. He emphasized that the department required dishes and glasses to be washed with soap and water until "clean to the sight and touch," after which they must be dipped in water heated to 180 degrees, or a chemical solution. Chemical solutions alone are not enough, the department says, since it takes soap and water to free dishes of the grease to which germs cling.

The taproom proprietor was fined $10, and $4 costs. So was another, in whose taproom inspectors found glasses with a 10,000 count. Philadelphia Inquirer, March 8, 1941.

"A SCHOOL HEALTH PROGRAM IN A RURAL AREA"*

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It has been said, "For some years, now, Health Education has been making a continually larger place for itself among the tools for promoting the public health." Many of us recognize this quotation from one of the outstanding leaders and instructors in the Health Education field. Again we recall that appropriate reference, of our President-elect, "Public health education has reached its adolescence." Its infant wails were heard some fifteen years ago. Authorities have stressed for years the importance of "democratization of knowledge" and "the need also of democratizing the *Method* of Education." We must agree with that philosophy of ("learner-participation") technique, referred to by Dr. Counts.

It behooves us to do less preaching and theorizing regarding health education, and demonstrate the effectiveness of these principles by practical application of an organized community-coordinated program of comprehensive service. This is the era of actual performance. Work and more work. The day of the swivel chair artist is past. We have been theorizing too many years already, as is evidenced by the appalling statistics of the physical condition of the young men subjected to the examinations for selective service this past year. Almost four out of ten men were rejected because of physical deficiencies. We, whose responsibility it was to examine the "flower of our youth" during the emergency of 1917-1918, were astonished then as we are now, twenty-four years later, to find almost the same conditions so far as physical standards of health are concerned; in spite of the fact that the nation solemnly determined to take steps to correct the causes, then as now, of this national disgrace. To reminisce and discuss the causes of these matters, now, would be to consume more time on theorizing on our regrets of yesteryears, time which is sadly needed for discussion of practical rehabilitation of many of our youths of today. Our immediate job as public health officials and professional health educators is to prepare ourselves and our programs for the important work now awaiting us.

Whether we are worse off physically now than in 1917-1918 is controversial. Physical standards are higher now than they were

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then. The fact remains that while we may be no worse now than 24 years ago, we certainly seem to be no better.

Teaching health education by word of mouth, visual education, and theorizing has not and will not accomplish the desired results alone. There must be, in the opinion of many, practical and actual coorelated educational programs with remedial service to the middle classes and low income groups, otherwise it is practically useless to carry on a practical health educational program. Furthermore, such remedial services to the so-called underprivileged group, combined with a general program of health education result in stimulating those persons financially able to seek and obtain additional remedial care. In 1918-1919 many states and communities capitalized on the urgency of that emergency to enact health laws to provide the machinery to embark on a constructive public health county unit organization plan of administration.

We in Ohio enacted, what we then believed to be ideal mandatory public health legislation, only to see it nearly lost by attempted repeal by the State Legislature, six months later, because of the cost of financing. Through the alertness, however, of that great benefactor to the field of Public Health administration, Dr. Allen W. Freeman, and his associates, the best principles and provisions of the law were salvaged, and an era of constructive organization and effective public health program initiated. These were later to be stimied by political interference of selfish politicians.

The past three years, however, have been conscientiously devoted in our state, to re-establishing public health education and administration on a basis of meritorious service, going back and picking up the loose ends, and correlating these services most productive to the health, safety, and welfare of our people.

We believe that the local home, rule, community effort, comprising fact-finding surveys, recommendations to individuals and communities, correlation of school, parent-teachers organizations and department of health activities, with a careful follow-up program of remedial and corrective service for medical and dental deficiencies for those children whose parents cannot provide them, will better accomplish the correction of our national health defects in a high percentage of our population.

Subsequently, the organization and the administration of proposed prepaid medical and dental service corporations on a nonprofit basis for individuals and families of limited income, will provide a more satisfactory means for a corrective service plan.

For years we have been given plans, programs and technique

for school health service in our urban districts. Rarely have we who are engaged in rural public health administration had the benefit of the experiences of reasonably successful rural programs. So few have been these opportunities that we who are attempting such coordination service are pioneering this field of public health. Particularly rare is a generalized joint district Board of Education-County Board of Health program.

Authorities have stressed the fact that a school health program should be the responsibility of the schools. This may be true for urban communities, but is quite impractical for rural school health programs. There may be numerous district boards of education having jurisdiction over their respective school district, supervised, it is true, by a County Board of Education. However, such county board does not have jurisdiction of disbursement of district school funds and thus may only recommend or suggest and fix academic curricula and schedules. It thus falls upon the county department of health to act as correlator and take the initiative in organization.

We believe that these objectives and scope should include:

1. Sanitation supervision.
2. Physical setup of buildings.
3. Medical supervision and service.
4. Dental supervision and remedial service to indigent groups.
5. Tuberculosis case finding programs.
6. Correlation of health education.
7. Public health nursing follow-up of families and pupils in need of remedial service.
8. Communicable disease control.
9. Adult health education program.

The Rural Health Districts in Ohio, as in most states, are comprised of numerous township and village school districts, primarily responsible for a major portion of a Public Health Program of a whole time rural health district. Summit County General Health District, therefore, has 18 separate township and village school districts with one or more centralized grade and high schools in each district. The total enrollment for 1941 is 11,500 pupils.

Due to the fact that school authorities constantly insisted upon more extensive public health services from our department than our financial assets would permit, we attempted to sell the respective Boards of Education as to the merits of financially cooperating with the County Department of Health in providing a Planned Rural Child Health Program. We were successful in interesting 13 of the 18 respective school districts to the extent of their paying approxi-

mately 50 cents per pupil per year. The Board of Health agreed to underwrite the difference in cost for such a program.

The total extra-curricula budget for this program amounted to $7,200.00 for the fiscal school year. It provided the services of a full time dentist, full time school physician, and a completely equipped mobile dental trailer unit.

The program consisted of physical examinations of 6,514 children within the 13 school health districts participating; a dental examination made by the school dentist; a dental education program wherein the parents of the child having dental defects were given the opportunity either to agree to take their child to their family dentist or to request that the remedial dental work be done by the School Dental Clinic, represented by the Trailer Unit. The economic status of those parents who requested clinic service was carefully investigated and only those coming within a definite indigent or low bracket group were given the remedial dental services.

The school on the second fiscal year restricted his physical examinations to the first, third, and seventh grades. Special consultation work is carried on by the school physician, in cooperation with the teacher, parent and child, of those children who are retarded in order to determine whether or not a physical defect might be responsible for such retardation. This we classify as our special problem study groups. It is extremely gratifying to us to obtain the fullest cooperation from the County Medical and Dental Societies.

To our knowledge this is the first time in the history of Ohio that a program of this nature, wherein the Rural District Boards of Education have financially contributed to the Public Health Program made available to the rural schools.

The present national emergency is a real challenge to the public health profession. We have suggested, we have recommended, we have criticized and we have been criticized. We have claimed much in the name of public health administration and health education, much is now expected of us in meeting this problem.

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First Aid,—The principals and teachers in the public schools of Portland, Oregon, are being required to take the Red Cross First Aid Course. To take care of the 1700 persons involved in this program, classes are held in three high schools open for this purpose. The standard Red Cross certificate will be issued to those completing the course successfully.

A USABLE DENTAL HEALTH INDEX FOR SCHOOLS*

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The training of the lay person was provided for the junior author at the Forsyth Dental Infirmary for Children. The first step was to have her become thoroughly familiar with all teeth in the mouth—both deciduous and permanent. She was forewarned by the dentist in charge of her training that one seldom sees a perfect set of teeth in making a dental examination. However, a study of a model of teeth in perfect condition was used in developing accuracy in distinguishing and identifying the teeth before beginning the study of aberrations and abnormalities.

The second step was to familiarize the worker with the appearance of teeth in the mouth, noting peculiarities which occur. The third step was the acquiring of experience in the use of the mirror, explorer, and tongue depressor in inspecting the teeth. The fourth step was practice in charting the presence or absence of the first permanent molars. This training was carried out in six visits to the infirmary as follows.

First visit. Study under dental direction of a model of the teeth of a seven year old child's teeth and a model of a complete set of permanent teeth. The first mentioned model consisted of a rubber jaw and palate with teeth of a hard plastic substance, which were removable from the sockets. On departing, the student received tooth models and a dental mirror for further home study and practice.

Second visit. Student's ability to put the teeth back in the rubber model was checked. The morning was spent in the examining room and the extraction department. Here the student had practice in identifying different teeth.

Third visit. Student checked in replacing teeth in model and observed work of interns and hygienists, a dentist going from

* Continued from the January, 1942, Journal.

chair to chair with the student to study the first permanent molars in each case. This procedure was continued throughout the day as new children came in.

Fourth visit. A dentist gave the student instruction in the technique of inspecting teeth, and the student obtained practice by actually examining the mouths of patients with mirror and explorer.

Fifth visit. Student examined the mouths of various children and observed the dentist correcting carious teeth.

Sixth visit. Student's ability to identify first permanent molars was tested by the dentist in the examining and extracting room. In each case, the student stated whether the first permanent molars were unerupted, present, or lost, and, if present, she pointed them out. She also named other teeth in the mouth designated by the dentist.

The time consumed in this training totalled twenty-five hours.

Following the training period, arrangements were made for the lay person and a dentist from the Forsyth Dental Infirmary to examine the same group of children in the Beebe Junior High School, Malden, Massachusetts. On the appointed day, 343 school children, ranging in age from eleven to eighteen years, were examined. The length of time used in making these examinations totalled three hours. This included, besides the actual time used for the examination, the time needed for pupils to pass from one classroom to another between periods, and the time required for the examiners to go from one classroom to another. The average time for the entire examination procedure in a classroom of thirty children was approximately fourteen minutes.

In these examinations tongue depressors only were used. The data were charted on 3 x 5 inch white and pink paper slips, which came in blocks of 100 sheets each. The blocks used by the dentist had the upper right-hand corner cut off to distinguish them from the blocks used by the lay person. A white slip was passed to each boy and a pink slip to each girl. In the upper left hand corner each child wrote his name, school, and age in years. Below the child marked an upright cross. Each pupil made two slips, one for the use of the dentist, and one for the use of the lay examiner.

The children then filed up for examination by rows, bringing slips with them. They were observed in the same order by both examiners. The examinations were made in a well-lighted area of the room near the windows. The examiners were seated; each pupil, as his turn came, sat in a chair facing the examiner. As

the first permanent molars in each mouth were inspected, the examiner took the paper slip from the child and charted his findings according to the following code:

(1)	(2)
√	√
(3) √	× (4)

— K E Y —

1. Upper right first permanent molar	Check mark (√)—present
2. Upper left first permanent molar	Check mark (x)—lost (extracted or with only roots remaining)
3. Lower right first permanent molar	
4. Lower left first permanent molar	

The 343 children examined represent 1372 first permanent molars. The dentist and the lay examiner agreed with respect to 1359 and disagreed with 13 as to whether the molars were present or lost. This is a percentage agreement of 99.1%. These thirteen cases of disagreements were not all in the same direction, however, but were balanced. The dentist noted five lost first permanent molars not found by the lay person, and the lay person recorded eight lost first permanent molars not found by the dentist. The dentist reported 217 lost first permanent molars and the lay person reported 220. In other words, the dentist reported 63.3 lost first permanent molars per hundred children and the lay person reported 64.1 lost first permanent molars per hundred children, representing an agreement with respect to number lost of 98.8%. Rapid and reliable examinations can be made by a trained lay person.

In order to secure additional data, the lay worker whose reliability had been tested continued with the examination of 3759 Malden school children to determine first permanent molar mortality. The number of lost first permanent molars per hundred children from ages 7 to 18 inclusive is shown in the accompanying graph and the data are also included in Table I. The percentage of children in this group at different age levels with one, two, three, and four lost molars respectively are shown in Table II.

Table I

An Analysis of the Findings in a Study of the 1st Permanent Molars in 3759 Children of the Malden Grammar and Junior High Schools, Ages 7 to 18 Inclusive

No. Lost 1st Perm. Molars Per 100 Children.

Age	7	8	9	10	11	12	13	14	15	16	17	18	19
Girls													
No. Children	7	184	274	281	319	308	242	159	43	9	4		
upper right	*	0	0.4	0.7	0.9	1.6	9.1	7.5	6.9	*	*		
upper left	*	0.5	0.4	0.4	1.6	2.6	5.4	4.4	9.3	*	*		
lower right	*	1.1	4.4	4.6	6.9	13.6	17.3	22.6	25.6	*	*		
lower left	*	2.2	4.0	8.2	7.2	17.2	21.5	23.9	23.2	*	*		
Total No. lost 1st Perm. molars per 100 children	*	3.8	9.1	13.9	16.6	35.1	53.3	58.5	65.1	*	*		
Yearly increment per 100 children		....	5.3	4.8	2.7	18.5	28.2	5.2	6.6				

No. Lost 1st Perm. Molars Per 100 Children.

Boys													
No. Children	10	151	246	296	308	325	266	200	92	31	3	1	
upper right	*	0	2.0	1.3	0.9	4.3	5.6	6.0	16.3	12.9	*	*	
upper left	*	0	1.2	2.0	0.3	4.0	5.6	6.0	15.2	12.9	*	*	
lower right	*	1.9	2.8	4.7	6.8	12.3	19.5	21.5	27.2	35.5	*	*	
lower left	*	4.6	2.8	3.7	5.8	12.6	19.2	27.5	36.9	29.0	*	*	
Total No. lost 1st Perm. molars per 100 children	*	6.6	8.9	11.8	13.9	33.2	50.0	61.0	95.6	90.3	*	*	
Yearly increment per 100 children		....	2.3	2.9	2.1	19.3	16.8	11.0	34.6				

Both Sexes

No. Lost 1st Perm. Molars Per 100 Children.

No. Children	17	335	520	577	627	633	508	359	135	40	7	1
upper right	*	0	1.1	1.0	0.9	3.0	7.3	6.7	13.3	10.0	*	*
upper left	*	0.3	0.8	1.2	0.9	3.3	5.5	5.3	13.3	12.5	*	*
lower right	*	1.5	3.6	4.7	6.8	12.9	18.5	22.0	26.7	32.5	*	*
lower left	*	3.3	3.5	5.9	6.5	14.8	20.3	25.9	32.6	32.5	*	*

Total No. lost 1st Perm. molars per 100 children.

100 children	*	5.1	9.0	12.8	15.3	34.1	51.6	59.9	85.9	87.5	*	*
Yearly increment per 100 children		....	3.9	3.8	2.5	18.8	17.5	8.3	26.0	1.6		

Table II

The Percentages of Malden School Children at the Various Age Levels With One, Two, Three and Four Lost 1st Permanent Molars, Ages 8-16 Inclusive.

Girls									
Age in Years	8	9	10	11	12	13	14	15	16
Number in Group	184	274	281	319	308	242	159	43	9

* Not computed for groups of less than twenty children.

Percentage of Children With Lost 1st Perm. Molars.									
1 lost	0.5	4.7	7.5	10.3	9.4	13.2	15.0	13.9	2.2
2 lost	1.6	2.2	3.2	2.1	10.4	11.6	13.2	9.3	1.1
3 lost	0	0	0	0.6	0.3	2.0	3.8	4.6	1.1
4 lost	0	0	0	0	0.9	2.5	1.9	4.6	0
Total % of children with 1 or more lost 1st Perm. molars	2.2	6.9	10.7	13.2	21.1	29.3	33.9	32.5	4.4
Boys									
Age in Years	8	9	10	11	12	13	14	15	16
Number in Group	151	246	296	308	325	266	200	92	31
Percentage of Children With Lost 1st Perm. Molars.									
1 lost	2.6	2.4	5.7	4.9	10.8	18.0	15.5	16.3	19.4
2 lost	2.0	1.2	1.0	4.5	4.3	7.9	13.5	11.9	25.8
3 lost	0	0.8	1.0	0	0.9	1.5	1.5	3.3	6.5
4 lost	0	0	0.3	0	1.5	2.6	3.5	10.9	0
Total % of children with 1 or more lost 1st Perm. molars	4.6	4.5	8.1	9.4	17.5	30.0	34.0	42.3	51.6
Both Sexes									
Age in Years	8	9	10	11	12	13	14	15	16
Number in Group	335	520	577	627	633	508	359	135	40
Percentage of Children With Lost 1st Perm. Molars.									
1 lost	1.5	3.6	6.6	7.6	10.1	15.7	15.3	15.5	20.0
2 lost	1.8	1.7	2.1	3.3	7.3	9.6	13.3	11.1	22.5
3 lost	0	0.4	0.5	0.3	0.6	1.8	2.5	3.7	7.5
4 lost	0	0	0.2	0	1.3	2.5	2.8	8.9	0
Total % of children with 1 or more lost 1st Perm. molars	3.3	5.8	9.4	11.3	19.3	29.7	33.9	39.2	50.0

It will be noted that for both boys and girls there is a definite increment in the number of lost first permanent molars per 100 children for each succeeding age group, with a variation from 5.1 lost first permanent molars per 100 children for 8 year olds to 87.5 per 100 children for 16 year olds. As shown in Chart I there is a decided jump in the increment of lost first permanent molars per 100 children in the age groups 12 through 15 years over the preceding groups, 8-11 years of age. The increase in the number of lost first permanent molars per 100 children for the 12-13 year age group is particularly marked. Among the girls, this increase is 115% over that of the preceding age group, and among the boys, this increase is 145%.

In the age groups, 9 through 13 years, the number of lost first permanent molars per 100 children among the girls is greater than among the boys. This was also shown to be true in the Hagerstown Study of the United States Public Health Service on tooth mortality.[7] In the 8 year old age group, however, and again in the 14-15 year old groups, this study shows the boys to exceed the girls in the number of lost first permanent molars per 100 children. Although the Hagerstown study does not indicate the latter to be

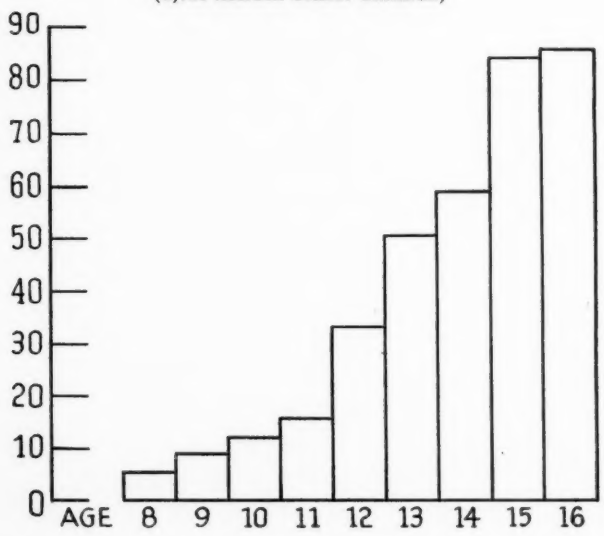
the case, other dental studies have shown that such variability does occur.[11-12]

Of a total of 1,090 lost first permanent molars among the 3,759 Malden children, 857 of these or 77.9% were lower first permanent molars. Among the girls, the lower first permanent molars comprised 81.8% of the total; among the boys, 75.9%. These findings are similar to those of the Hagerstown study[7] where it was found that 80% of the total number of lost first permanent molars in girls and 70% of the total number of lost first permanent molars in boys were lower first permanent molars.

Likewise, there is a yearly increment in the percentage of children at the various age levels who have lost one or more first permanent molars among the 3,759 was 647 or 17.2%. Of these, 87.2% were children who had lost one or two first permanent molars only. 90.1% of the girls and 84.6% of the boys had lost no more than two first permanent molars.

It is clear that a sufficient number of first permanent molars are lost to make the "number of lost first permanent molars per 100 children" a reliable and comparable index for different school systems although, of course, figures would be highly variable if one tried to compare individual classrooms because too few children would be involved.

LOST SIX YEAR MOLARS
Per 100 Children
(3,759 Malden School Children)



Summary and Conclusions;—A study was conducted by the authors to ascertain the value of the lost first permanent molar as a simple, inexpensive and helpful index of dental health, which could be used by schools annually without employing dental services. Two things were done.

(a) A lay person undertook a brief training period in the inspection of first permanent molars at the Forsyth Dental Infirmary for Children. Following this, she inspected the same group of 343 Malden school children as did a dentist from the Forsyth Dental Infirmary. The data of both examiners was compared and showed that a lay person, after such training, could note lost first permanent molars with a slight degree of error.

(b) The lay person, in addition to the first group of 343 children, inspected first permanent molars of 3416 other Malden school children in grades III to VIII inclusive. The presence or absence in the mouth of each first permanent molar was charted and the data by age levels are here presented.

Conclusions drawn from this study are as follows:

1. A lay person can be trained by a competent dentist experienced in children's work to observe accurately the lost first permanent molars since there was a 99.1% agreement of dentist and lay person on all first permanent molars, and an agreement of 98.8% on the number of lost first permanent molars per 100 children.

2. As shown by the Malden data, there is a definite increment in the number of lost first permanent molars per 100 children with each successive year of age. Likewise, there is an increase with each succeeding age group in the percentage of children who have lost one or more first permanent molars.

3. The percentage of lost lower first permanent molars is appreciably higher than that of upper first permanent molars.

4. Enough first permanent molars are lost at the age levels studied to make the "number of lost first permanent molars per 100 children" a comparable index.

5. The number of lost first permanent molars per 100 children is a simple, inexpensive, and significant index of dental health. It does not tell what needs to be done in the mouths of children, and it does not necessarily predict for the individual child the health of the other permanent teeth. However, it is the simplest index of permanent tooth mortality for use in the schools, and it is probably as useful as a total tooth mortality index because 95% of the lost permanent teeth are first permanent molars. Such an index can readily be secured, and should materially assist in focusing the at-

tention of the community upon measures for improvement of maternal and child health. A dentist, a dental hygienist, or a properly trained lay person can collect reliable data with an expenditure of not more than one hour per 100 children. The computed indices for the various ages would serve to clarify the dental status of the children, and would show whether there has been an improvement in dental health, and would make possible a comparison of the dental health status of these children with those of other communities.

6. We recommend the use of the lost first permanent molar index annually by public school systems, to be supplemented by a periodic and complete dental survey by experienced dentists at least once in five years. The use of this annual index and periodic survey will give us a better picture of present status and a stimulus to the community to further improve conditions.

ACKNOWLEDGMENTS

The authors wish to extend sincere thanks to all those who, through their willing cooperation, made this study possible: to Dr. Roland E. Weller, Dr. Fred H. Rogers, Dr. Polly Ayer, Dr. Mark D. Elliott, Dr. Kenneth Lawrence, Miss Ruth L. White, Miss Irene Goodhue, and dental interns and dental hygienists, at the Forsyth Dental Infirmary for Children; also, to Superintendent F. G. Marshall, and the principals and teachers of the Malden schools.

7. Knutsen, J. W., and Klein, H., *Public Health Reports*, 53:1021-1032, June 24, 1938.
11. Deatherage, C. F., Journal of American Dental Association, 25:480-488, March, 1938.
12. Cohen, J. T., Journal of the American Dental Association, 23-312-325, February, 1936.

* * * * *

Food for Lunches,—When we started our lunchroom at school last year we found it difficult to get the food to carry on the cooking. Every child realized that this problem would have to be solved before we could continue our lunchroom. Each child decided to have his own vegetable garden at home and raise more vegetables than he did the previous year. The canning centers were planned. The children decided upon the number of jars per family. When school opened this year the school had more than one hundred jars of fruits and vegetables, which could be used in the lunchroom. The continuation of this plan is of ever greater importance as the need for the total defense of our country becomes more real to us all.—Sunnyside School, Montgomery County, Va., One-room School, Grades 1-7, Federal Security Agency, U. S. Office of Education, Washington, D. C., Circular No. 191, p. 14.

A SCHOOL HEALTH PROGRAM IN A DEFENSE AREA

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Health Education Director, Public Schools, San Diego, California

San Diego has reached, in 1941, the population it was normally expected to reach between 1960-70. The population very suddenly jumped a normal 20-year span. This, of course, is presenting many problems which were expected to be met in 20 years of normal planning. Some of these major problems are utilities, especially water, housing, traffic control, sewage disposal, schools, and many other necessities basic to urban life.

The regular day school enrollment in the San Diego City Schools has already increased by 3500 pupils and the total enrollment, including adult and vocational schools, has increased 7500. This suddenly increased enrollment is superimposed upon a school system already struggling to meet the educational needs of a rapidly growing community.

Local taxes were found to be inadequate even to attempt to meet the increased educational needs of this great influx of army and navy personnel and defense workers. A large share of the real estate being created by the great wave of building was not taxable. Federal aid was imperative.

Through the foresight of the Superintendent of Schools and the Board of Education, application was made early for Federal aid. Eventually three and one-half million dollars were made available for meeting the new demands upon our educational system.

Six new buildings and eighteen additions to buildings are either completed or planned at this moment. An attempt was made to plan the new buildings to fit the new school programs and to make them permanent additions to the community. These new schools will have complete health units including nurses' offices and rest rooms for children.

Where a year ago lay a sage brush mesa, now stands a city of 3,000 homes, America's newest streamlined city, Linda Vista. Two elementary schools and a junior-senior high school are holding classes daily. These schools consist of clusters of newly built houses—a house for each teacher and his class. The principal has a house for his office; the physical education instructor has a house for his office and activities, and the school nurse has a house for health activities.

As many as 60 new pupils register in one elementary school

during one week. These children come from all sections of the country. Their parents are defense workers in the great new plane factories in San Diego.

The health backgrounds of these children vary widely. Some children come from communities having efficient school health programs; others came from sections of the country where school health services and health education are unknown. During the past school year the incoming children were generally poorly nourished and in great need of extensive health aid. During the present school year the physical status of our incoming children is found to be much better. It may be that the first call for defense workers attracted the migrant classes which were unable to compete successfully wherever they happened to be. Now that this group is absorbed in industry, we are attracting a better economic class of people. These recent newcomers approach the health standards of our California children.

We have had difficulty in finding well equipped school nurses with teaching credentials to cover our increased program. Health instruction is particularly important for these new children because they have come from all parts of our country and are facing a new and strange environment which, in spite of its "fine climate," offers conditions and activities entirely new to these children. Few of them know of the rip-tides in our ocean, the strength of the rays of our sun, and the hazards of some of our insects. Many of these children have come from rural areas, and know little of the ways of a city and the dangers of congested traffic to life and limb. The old home ties are broken for these people, and they are re-adapting themselves to their new environment. Many need to know where to go for free medical and dental care. Others are in need of a family physician and dentist, and must be helped to select these health advisers wisely. Perhaps at no other time can a school health program be more effective than at a time of transition when old patterns have been largely left behind and new ways of living are being developed.

In general, our approach to our new challenge is to be on the job and make the best of every opportunity as it presents itself. The housing of these people and of our program is being met. Health services are provided from the day each new school opens. Health instruction is being provided as soon as classes can be arranged. The school nurse is the first person to enter the new homes from the school and community interest background. The special health problems unique to this new group are being used as

a basis for the health service and education program. Other than these special considerations, our routine school health program including testing, immunizing, examining, and so forth is being carried on as usual. In this way we feel we are meeting the needs of our new-comers to San Diego, and at the same time are carrying on with a regular program, building toward better health and physical fitness.

* * * * *

Eight Commandments,—A prominent writer has formulated twelve commandments, which makes him two up on Moses. We have a few of our own, for teachers:

1. Think at least once a week. Don't let jumping at conclusions be your only mental *(or physical)* exercise.
2. Be polite to your superiors; remember you're just as unimportant as they are.
3. Don't be discouraged if you can't reach the top; you can always sit at the bottom and make excuses and you'll have lots of . . . company.
4. Never forget there are two sides to every pedagogical question—yours and the wrong one.
5. Everybody makes mistakes, but be careful not to lay all of yours in one basket.
6. Keep in mind that it isn't where the educational theory comes from that counts—it's how it works.
7. Don't sneer at plodders. It's always the mechanical rabbit that wins the race, not the greyhound.
8. Don't despair if your young lone eagles grow up to be middle-aged buzzards in bad company. Keep on saying, "Civilization is just around the corner." In The Clearing House, December, 1941; modified somewhat by editor.

* * * * *

Information for Teaching,—The Division of University Extension of the Massachusetts Department of Education has issued an excellent list of teaching material under the title, "Visual and Auditory Aids for Teaching"—Silent and Sound Motion Pictures, Stereoptican Slides, and Educational Recordings. Bulletin of the Department of Education, Massachusetts.

INCREASE IN HEIGHT AND WEIGHT AMONG THE UNDERPRIVILEGED

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A number of studies have been made which indicate that the general height and weight of the race is increasing. Mosher[1] noted that the height of Stanford University women students has increased 2.5 cm. in thirty years. Gray observed that American boys of American-born parents were more than 2 inches taller than the same type fifty years earlier. A study[3-4] made at Harvard University which compared the heights of 1,166 fathers and 1,461 sons indicated that the mean height of the fathers was 68.6 inches while that of the sons was 70 inches. Chenoweth[5] compared the heights and weights of college freshmen who had been admitted to the University of Cincinnati from 1916 to 1936 and noted that the men increased in height from 67.45 inches to 69.23 inches and in weight from 132.05 pounds to 141.79 pounds. He therefore concluded that mankind was steadily growing taller and attributed it to the higher standards of living, higher degree of health intelligence, decrease in communicable disease, and better nutrition.

Many investigations[6] show that economic status and social position influence growth a great deal. Chenoweth also observed that the mean height of the students at the University of Cincinnati was slightly lower than that at Harvard and attributed it to the greater wealth and social position of the latter group. However, the studies mentioned above dealt almost entirely with the middle and upper classes from which the vast majority of college students are drawn. We therefore thought that it would be of scientific value to determine how the heights and weights varied in the lower classes of society. We could not find a more representative sample of the poorer elements and those with the lowest social position than the inmates of a state prison. Moreover, this material lent itself to investigations of this nature since we had

1. Mosher, C. D.: California State J. Med. 19: 53 (Feb.) 1921.
2. Gray, H.: J.A.M.A. 88: 908 (March 19) 1927.
3. Bowles, G. T.: New Types of Old Americans at Harvard, Cambridge, Cambridge University Press, 1932.
4. Hooten, E. A.: Harvard Alumni Bull. 33: 994 (1931).
5. Chenoweth, L. B.: J.A.M.A. 108: 334 (Jan. 30) 1937.
6. Dick, J. L.: Defective Housing and the Growth of Children, London, George Allen and Unwin Ltd., 1910. Gray, H., and Ayres, J. G.: Growth in Private School Children, Chicago, University of Chicago Press, 1931. Diehl, H. S.: Human Biol. 5: 445 (Sept.) 1933.

reliable data as to height and weight in the records of the inmates.

A study was therefore made of the heights and weights of all the admissions to the Clinton* State Prison from January 1, 1910, to October 1, 1940. These were all sorted with respect to their year of birth so as to create age groups that passed through their period of growth at approximately the same time. The dates of birth varied from 1840 to 1920 but, since there were too few cases in some of these years, only the years 1871 to 1920 were used. We thus found 10,923 cases suitable for our investigation. The mean heights were then calculated for each five-year period. Because of the influence of age on weight, the cases for each year of birth were further divided into three age groups: 17 to 29 years, 30 to 39 years, and over 40 years according to their age on admission to prison. The mean weights were then calculated for each ten-year period. The average deviations and probable errors were derived for all the means. The results are given in Tables 1 and 2.

TABLE 1.—HEIGHTS OF INMATES, 1871-1920

Year of Birth	Number of Cases	Mean Height in Inches	Probable Error, Inches
1871-1875	376	66.3	±0.12
1876-1880	582	66.6	±0.09
1881-1885	976	66.6	±0.07
1886-1890	1422	66.3	±0.06
1891-1895	1721	66.5	±0.05
1896-1900	1728	66.7	±0.05
1901-1905	1495	67.0	±0.05
1906-1910	1232	67.3	±0.06
1911-1915	1017	67.6	±0.07
1916-1920	374	67.7	±0.11

TABLE 2.—WEIGHTS OF INMATES, 1871-1920

Year of Birth	Number of Cases	Mean Weight in Pounds	Probable Error
(a) 17-29 Years of Age on Admission			
1881-1890	1017	144.6	±0.4
1891-1900	2137	145.2	±0.3
1901-1910	1972	147.4	±0.3
1911-1920	1391	147.3	±0.4

*New York.

(b) 30-39 Years of Age on Admission			
1871-1880	447	144.7	±0.7
1881-1890	867	149.6	±0.6
1891-1900	958	151.4	±0.6
1901-1910	755	149.9	±0.6
(c) Over 40 Years of Age on Admission			
1871-1880	505	151.5	±0.8
1881-1890	514	154.2	±0.8
1891-1900	360	157.6	±0.9

There was a difference in height of 1.4 inches between those born in 1871 to 1875 and those born in 1916 to 1920. Since this is thirteen times the probable error (a difference of twice the probable error being sufficient to make a result statistically significant), we must conclude that even the under-privileged are increasing in height. However, we must also note that the gain in height for a period of fifty years was equal only to the gain achieved by the Cincinnati students in twenty years and by the Harvard students in one generation. Moreover, while the Cincinnati students were about 0.7 to 1.2 inches shorter than the wealthier Harvard boys, the Clinton Prison inmates were about 1.5 inches shorter than the Cincinnati freshmen. We may therefore say that our rising standard of living, improved health conditions, and better nutrition have affected the poor and the underprivileged, as well as the other groups of society, although to a lesser extent.

A gain in weight was also found between the inmates born in 1871 to 1880 and those born in later years. The group that was 17 to 29 years of age showed an increase of 2.7 pounds (about six times the probable error) in thirty years. The group that was 30 to 39 years of age had an increase of 5.2 pounds in thirty years (about eight times the probable error). The group over 40 years of age on admission to prison showed a difference of 6.1 pounds (about six times the probable error). All these results are statistically significant, although they are all appreciably lower than the difference of 9.7 pounds shown by the Cincinnati students. Incidentally, it may be noted that among the poor, as well as among the wealthy, weight tends to increase with age, since the group over 40 years old was 7 to 10 pounds heavier than the group 17 to 29 years of age.

Summary

1. Prison inmates born in 1916 to 1920 were 1.4 inches taller than those born in 1871 to 1875 and 2.7 to 6.1 pounds heavier.

2. Even the poorer and underprivileged groups of society are

improving in height and weight. However, this improvement is not so high as that shown among the wealthier and more comfortable groups.

3. It is likely that the increase in height and weight is due to better nutrition, higher standards of living, and better health conditions, all of which have improved appreciably even among the lower strata of society.

Acknowledgment is hereby made to Dr. Blakely R. Webster, Dr. Walter M. Martin, and Mr. Joseph Kalish for their kind cooperation.[1]

* * * * *

Handicapped Children,—"Radical reforms in the administration of special classes in the New York City schools are being worked out by Board of Education officials. They result from the report of an investigating committee . . . that thousands of children were being taught at high cost in special classes for the physically handicapped who would be better off in the regular classes. The committee also found that other thousands of children, who were in need of special attention because of physical handicaps, were being neglected." *New York City World-Telegram*, October 6.

* * * * *

Tuberculosis,—The cost of discovering each of 26 active cases of tuberculosis among 4,247 apparently healthy persons X-rayed by the Alameda County (Calif.) Tuberculosis & Health Association was $65.70. The examinations were carried on over a period of a year in factories, stores and schools, stress being placed this year upon the examination of adult employees in industry. Bulletin of the National Tuberculosis Association, Vol. 27, No. 12, Dec. 1941, p. 192.

* * * * *

New State Director of Health and Physical Education,—Dr. Wilson G. Guthrie, Newark, has been appointed Director of Health and Physical Education of the State Department of Public Instruction to succeed the late Dr. Allen G. Ireland, Trenton. Dr. Guthrie graduated at the University of Tennessee College of Medicine, Memphis, in 1918. Journal of the American Medical Association, Vol. 117, No. 23, Dec. 6, 1931, p. 1993.

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EDITORIALS

During the last three days of the year 1941 there were held at Detroit, Michigan, the annual meetings of the National Collegiate Athletic Association, of the American Association of Football Coaches, and of the College Physical Education Association. This is their annual custom. The noteworthy fact is that almost the total program was devoted to discussions of how the present national emergency would affect college programs in sports and in physical education.

The general conclusion was that intercollegiate athletics need not necessarily be restricted, but that it would be modified, and that college physical education would not be restricted, but must be expanded greatly and made more vigorous and more of the endurance and stamina building type, not necessarily less social in its objectives, but certainly more vigorous physically.

In this particular we are again forced to the same conclusion that is so ably and so truly stated by R. Tait McKenzie in his Editor's Preface to Fred Eugene Leonard's "History of Physical Education."*

"The shore of physical education is strewn with the wrecks of systems and movements, many of them good in themselves, but left to drift when the personal support and enthusiasm of the founder was removed from the helm. It has only been when some great

*Lea & Febiger, Philadelphia and New York, 1923.

national crisis had to be faced and the minds of patriots and scholars were engaged in the effort to meet it, that systems have been evolved great enough to survive the death of their founder, the test of time and change in their national conditions. This is notably true of the gymnastics of Denmark, Sweden and Germany. Incomplete as systems of physical education without the addition of games, but logical and accurate in their application to the conditions they have had to meet, whenever similar conditions have arisen it is to them we have turned for inspiration and instruction, and nowhere was this better shown than in the great war of 1914, where crude masses of untrained and underdeveloped men had to be made quick and accurate in response to command and given that control of their bodies that is the true function of physical education in its highest sense."

* * * * *

Constantly Boards of Education, school superintendents, and school health administrators are meeting and trying to solve new and often serious school problems. The educational progress, the health protection, the growth, welfare, and very lives of our children depend on the correct solution of these problems.

Within the last two or three years a flood of new and serious problems has poured upon the schools of some communities. Expanding industries, the creation of new industries, and the concentration of armed forces and their families has swamped the school facilities, and created enormous demands for trained and intelligent personnel. When this increased need fell upon communities already rapidly growing, and, therefore, near the limit of tax burden that community could bear, the problem has been wellnigh unsolvable. The city of San Diego, California is such a community. Its efforts toward a successful solution are briefly but well described in the article starting on page 55 of this issue.

One noteworthy and rare contribution to the solution of the problem is the use of unit buildings for class rooms, for special activities, and for administration. This contribution is peculiarly valuable because of the fact that in many of these rapidly growing cities and towns the expansion undoubtedly is temporary, and cheap unit construction will not leave the school district, after the emergency has passed, with huge expensive buildings on its hands.

The community, its Board of Education, the Superintendent of Schools, and the leaders and personnel of the school health service and health activities of San Diego are to be congratulated on the energy and success of their program.

ABSTRACTS

Tuberculosis,—Current indications are that when the final reports for 1941 are in, the death rate from tuberculosis for the United States will be somewhat less than 45 per 100,000 total population. This will mark still another year of record low mortality from this disease. The improvement will be more than 2 per cent over 1940, when, according to provisional reports, the death rate was 45.7 per 100,000. But a single year's record must be weighed only in association with the trend of several years, and when we carry our comparisons back further, it is found that even as recently as 1924 the death rate from tuberculosis was practically twice that of today; if we go back to 1900, we find that the mortality then was four and one-half times the present.

The tabulation provides a long-term perspective of tuberculosis mortality in the United States since 1900. The period since 1921 is of special interest, being characterized by a very steady decline.* During the last two decades—that is, since 1921— the death rate from tuberculosis decreased, on an average, by three per 100,000 each year, notwithstanding the two very slight increases noted for 1926 and 1936.

The extraordinarily low rates for these few years from 1932 to 1935 were somewhat unexpected and, since they came at a time when our economic depression was at its worst and unemployment was widespread, were all the more welcome.

Beginning with 1936, however, a new course of events in tuberculosis mortality appears to have set in. The year 1936 witnessed, for the first time in a decade, an increase in the death rate from tuberculosis, which, though small, nevertheless carried the point for the year above the trend line for the period under survey. Though this setback was relatively slight, and immediately gave way to a series of decreasing death rates, it is important to note that at no time since then has the death rate fallen below the trend line established from 1921 to 1940. However, the average annual decline in the death rate from 1936 to 1941 is a little over two per 100,000, whereas that for the period from 1921 to 1940 was about three for 100,000.

Unless appropriate measures are made effective immediately, the added strain of labor in defense industries and the inadequacies

* The earlier years, since 1900, data for which are included in the graph, have been discussed in detail in "Twenty-Five Years of Health Progress," 1937, pages 79 et seq.

of housing for defense workers will undoubtedly leave their mark on our record of tuberculosis mortality.

As the death rate is brought to lower levels, further gains will become more and more difficult, so that some slackening in the rate of improvement appears inevitable.

In 1940 twelve of the States of the Union already had death rates from tuberculosis below 30 per 100,000, and six of them—Nebraska, Utah, Idaho, Iowa, Wyoming, and North Dakota — had death rates of 20 per 100,000 or less.* All of the 12 States, with the exception of Maine and New Hampshire, are either in the Midwest or Far West. On the other hand, we find six States—all except Nevada in the southern tier of our country—with death rates from tuberculosis of 60 or more. Practically all of the States in this group are currently experiencing death rates from tuberculosis on a level with that prevailing in the country as a whole a decade or more ago. Statistical Bulletin of the Metropolitan Life Insurance Company, Vol. 22, No. 10, Oct., 1941, p. 5-7.

* The death rates for 1940 were derived from United States Public Health Reports, May 23, 1941, and preliminary releases of State data.

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Tuberculosis in Schools,—A tuberculosis survey in the schools of Rhode Island is reported by William P. Shields, in the November issue of the American Review of Tuberculosis. P.P.D., .00002 mg., 1st test and .005 mg., 2nd test, was used, with 31.2% positive reactors resulting from the 1st test and 16.2% resulting from the 2nd test. A total of 47.5% positive reactors was found among the 4320 persons tested. Teachers (18) and college students (168) were included in the tests. The number x-rayed was 1850 with the result that 3 cases, 0.16% of reinfection (adult) tuberculosis and 799 cases of primary (childhood) tuberculosis were found. This low incidence of reinfection tuberculosis did not in the opinion of the author support the dictum of J. A. Myers "that the tuberculosis problem in a community is measured by the relative frequency of the tuberculin reactors" in view of the fact that the relative frequency of tuberculin reactors was high and the incidence of reinfection tuberculosis was low. Other factors such as race, society groups, environment, and economic status may well play a part. American Review of Tuberculosis, November, 1941. Abstracted by S. B. McPheeters, M.D.

NOTES

Classes for Dull Pupils,—The discontinuance of the practice of the New York City school system of segregating slow children in special classes was recommended in a recent report to the city Board of Education. The report dealt with the five-year Speyer-School Experiment with bright and dull pupils which was completed last June. Included in the experiment were nine special classes of 25 pupils each. Two of the classes were of gifted children and seven of slow children. It was found that the effect of bringing the dull pupils together had an unfavorable effect on the pupils, although the dull pupils in these classes accomplished more than was expected.

On the other hand, the report commends special classes for gifted children. The report states that gifted children often become conceited and self-centered when placed in classes with average children. Such conceit is lessened when the gifted children are brought together. The report states that gifted children have a definite contribution to make to society. They must not be overlooked or lost, and their ability must not be allowed to go undeveloped. The program recommended for them is not one of acceleration, but an enrichment program built around special projects. Mental Hygiene News, Vol. XII, November, 1941, No. 3, p/ 2/

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Candy, Caries, and Delayed Eruption of Teeth,—To the Editor: What is the latest information regarding the influence of candy and other sweets on the teeth of children. Can candy be the cause of caries, and, if so, why more so than the use of sugar on cereals or other foods? In the presence of an otherwise well balanced diet and proper vitamin intake, could the use of sugars have any influence on the delayed eruption of the permanent teeth? J. G. Roberts, M.D., Pomona, Calif.

Answer.—According to present knowledge, candy and other carbohydrates are conducive to caries, the more freely fermentable ones being more detrimental. The effect of the carbohydrates is purely local on the enamel surface, and promotes bacterial activity leading to caries. Candy is more "caries promoting" than the sugar used on cereals since it contains much more carbohydrates and remains in the oral cavity for a longer time.

There appears to be no clinical evidence or experimental basis for any influence of sugars on the eruption of the deciduous or permanent teeth. Journal of the American Medical Association, Vol. 117, No. 16, October 18, 1941, p. 1404.

GUIDE FOR OBSERVATION OF PHYSICAL CONDITION OF PUPILS*

(CHECK POINTS NOTED)

Name of Pupil: *Age*: *Grade*:

Efficiency: Excellent Good Disappointing

Personality and Behavior: Superior child Immature Mentally dull
Alert Restless Listless Inclined to lead Inclined to follow
Domineering Shows off Accepts authority
Resentful of authority

Handedness: Right Left

Reading Difficulty: No Yes

Vigor: Excellent Good Tires easily Poor

Predominating Tastes: Athletic Quiet pursuits Artistic
No definite tastes

Vision: Normal Corrected Blinking Rubbing eyes Eyes water
Holds book near face Styes Crusted lids Eyes inflamed
Screws up face when reading Cross-eyed
Confusion in reading Tilts head to one side when reading

Hearing: Normal Rubbing or picking at ears Earache
Discharge from ears Inattention
Makes mistakes in following directions

Nose: Free breathing Apparent obstruction Discharge
Frequent colds

Mouth: Teeth dirty Obvious decay Inflamed gums
Foul breath

Glands: Swollen

Posture: Efficient Poor Very poor

Skin: Clear Eruptions (acute, chronic)

Nutrition: (teacher's estimate) Excellent Poor
Appearance of fatigue
Failure to gain since (put period of time)

General: Frequent visits to toilet Unusual thirst
Frequent absence for illness (state type of illness)

Teacher's Estimate of Child's Health: Excellent Good Fair Poor

School Work: Excellent Passing Failing

REMARKS:

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*Issued by the Massachusetts Department of Public Health. Acknowledgment for suggestions is made to the School Health Study, Astoria, N. Y., and Dr. William C. Hanson, Belmont, Massachusetts. This sheet may be obtained without charge from the Massachusetts Department of Public Health. Look it over carefully. Will it help your teachers to observe the condition of her children? Will it help the physician if the teacher sends the sheet with a child whom she is referring to him?

REVIEW

School Health Policy, Territory of Hawaii

Prepared By a Committee Under the Auspices of the Department of Public Instruction and the Board of Health

This statement of policy is the product of a cooperative effort in which over one hundred people representing the laity and professions interested in the health of the school child contributed to the conclusions set forth. The policy is described as tentative and preliminary and a Coordinating Committee has been set up to receive criticisms and suggestions. After a period of trial "This Coordinating Committee will incorporate valuable suggestions for change into a more final and conclusive type of policy." Doubtless provision for periodic revision will be made.

The preface and each of the eleven sections into which the policy is divided are severally prepared by separate committees. In the preface are set forth certain basic concepts upon which the health policy is grounded. These concepts are seven: (1) Health education is basic to other education; (2) Schools have a fundamental responsibility for health education of all children who are required by law to attend them; (3) Responsibility for child health rests upon many community groups. An adequate child health program comes about only when all groups plan and work together; (4) The parts of the school and public health agencies in a child health program are complementary and the benefits reciprocal where each functions properly; (5) A good school health program is three-fold, consisting of health services, health instruction, and the promotion of healthful environment; (6) Intelligent administration is necessary to the attainment of a good school health program; (7) In this program the teacher is the key person.

These sound but skeletal statements hardly outline the expanse of policy subsequently developed in eleven succeeding sections. Though only a restricted discussion is possible in about 38 typewritten pages, the horizons brought into view encompass wide reaches of modern thinking on the school health program. In the section on School Health Curriculum health education is defined and the characteristics of a vital health program discussed. In the course of this discussion it is stated: "To be vital, a school health program should affect the whole life of the child so that his conduct and attitude in his home and on the playground improve as a result of those learnings which the school helps him to incorporate into his living."

"The school health program must be based upon and oriented to the needs, interests, and purposes of children. That is what Kilpatrick means when he says, "The psychological order is the order of experience, of discovery, and consequently of learning. The logical order is the order of arrangement for subsequent use of what has already been learned." A vital school health program which is psychologically developed demands "a logical arrangement for subsequent use of what has been already learned." Some traditional schools have ignored the psychological order and attempted to bring about learning as an "order of arrangement for subsequent use" instead of making the logical arrangement follow learning. The result has been the more or less meaningless memorizing of facts that have often not functioned in the lives of the pupils. Some progressive teachers have ignored the necessity for a logical arrangement of what has already been learned. The result has been that learnings which have taken place in the psychological order have remained disorganized, chaotic, and thereby the less usable."

The scope and materials of instruction at the several levels in grades 1 to 3, 4 to 6, junior, and senior high schools are discussed, and some counsel given as to the method of instruction with citation of the criteria for the solution of methods set up by Hopkins in "Curriculum Principles and Practices." This section closes with a discussion of several methods for the evaluation of health instruction.

Curriculum planning moves in a sphere where telescopic vision, lucid thinking, an undisturbable sense of direction, and sound judgment are demanded. These qualities the committee has shown in good measure.

The valuable section on teacher training would have been bettered by a great emphasis upon and provision for courses in home hygiene and care of the sick. First Aid proposed as an elective course should be required. Such courses equip the teacher to aid the pupil to deal "realistically with practical questions and problems which the pupils and the parents are facing."

The section on Medical Examinations for School Children and Teachers and Correction of Defects states that, "children entering school for the first time are now examined individually in the family physician's office." "Organized medical groups throughout the territory have set special fees for this examination." This relationship with organized medicine marks the attainment of a goal much to be desired. "Ideally physical examinations should be

given yearly, this however is not practical for the school to undertake." Alas, it is infrequently practical anywhere! "The present practice of certain junior and senior high schools carrying on their own program on physical examinations should be encouraged until such time as individual examinations can be provided for all." Why should this admirable educational practice ever be discontinued? "Teachers should recognize their responsibility for continually noting the individual child's health and recommending him to his parents for medical attention when necessary." When efficiently performed few practices are more educative or more contributive to the well being of the pupils. The positions taken in this section are sound and as far advanced as is possible at present.

The function of the nurse in the school is too frequently misconceived. Even when sound standards are proclaimed the practice of "let the nurse do it" prevails unchallenged as educational sabotage. The following quotations from the important section on General School Nursing show the orientation of the Hawaiian policy. "The nurse recognizes the principal as the administrator of the entire school program and gives her services to the program, the needs, and the demands of the school." "The primary responsibility****for the education of the child with respect to health belongs to the teacher." "The major contribution which the nurse who is in the school on a visit basis may make is that of serving as an adviser, counselor or consultant to the faculty members." "The recording of all data on health records is the responsibility of the teacher in elementary schools." "Communicable disease control in schools and the early recognition of deviations from ordinary health are of necessity chiefly the responsibility of the classroom teacher. The nurse may guide and instruct the teacher**." "The same is true of first aid." "Neither nurse nor teacher should attempt any medical treatment of illness."

The sections on Communicable Disease Control and Sanitation and Safety of the School Environment are excellent. In connection with the latter, this reviewer voices the hope that some school health policy will elevate the janitor to a technical if not tutorial status, and explore the educational possibilities of the janitorial service.

In addition to the service of a staff of dental hygienists, a number of self-supporting dental clinics have been established. "Charges for any dental service are placed in a dental fund from which salaries of both hygienist and dentist as well as bills for necessary sup-

plies and equipment are paid." "The purpose of a self-supporting dental clinic is to make dental service available to a group of children who find it impossible to go to private dentists. These clinics are not in any way expected to infringe on private dentists. In fact they have been a means of stimulating interest of children in seeking dental service from private dentists." Such clinics would fill a great need that is widespread throughout the country. Hawaii is fortunate.

The Territory is apparently equally fortunate in having a well developed mental hygiene program in the schools and in the community. The section on Mental Hygiene states "the goals and principles of modern education and of mental hygiene are identical." "With these goals in mind it seems apparent that in any school health program the school has as much responsibility for the mental as for the physical health." The policy points to the responsibility of principal anad teacher, stresses the need of a well adjusted school personnel, enjoins a systematic program of guidance and counseling for children and child study for principals and teachers, recommends curricular and administrative flexibility to provide for the greatest possible degree of individualization, sets forth wholesome principles for the guidance of sex education, and emphasizes the importance of cumulative records.

The Psychological Clinic associated with the University of Hawaii operates a base clinic in Honolulu and sends psychologists to the outer islands. The Bureau of Mental Hygiene under the Board of Health operates a mental hygiene clinic in Honolulu for the examination, diagnosis and treatment of adults and children showing personality disorders and provides traveling psychiatric clinic service to the outer islands. Many of the states can only aspire to such services.

Three other sections on the Education of Exceptional Children (grouped in fourteen classes), on Physical Education and Play Activities, and on Adult Education complete the contents of the well considered and well balanced policy. This reviewer commends this territorial policy to the states for study. Much of it could be adopted with advantage by many states. Reviewed by S. B. McPheeters, M.D., Director of Public Health, Wayne County Health Department, Goldsboro, North Carolina.

MEETINGS

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, N. E. A.

SAN FRANCISCO CONVENTION, FEBRUARY 21-26, 1942

PRACTICAL PROCEDURES FOR IMPROVING HEALTH GUIDANCE AND HEALTH EDUCATION

Wednesday, February 25, 1942 — 2:30 P. M.

Symposium—Sponsored by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association; with the cooperation of the American Association for Health, Physical Education, and Recreation; the Department of Home Economics; and the Department of Science Instruction.

Chairman—Charles C. Wilson, Teachers College, Columbia University.

Presiding—George D. Stoddard, Dean, Graduate College, State University of Iowa, Iowa City, Iowa.

How Can Schools Improve the Nutrition of Pupils?
Agnes Fay Morgan, Professor of Home Economics, University of California, Berkeley, California.

How Can the Teaching of Science Contribute to Pupils' Appreciation of Health and Influence Their Day-by-Day Living?
Jack Hudspeth, President, Department of Science Instruction, N.E.A.; Box 16, Austin, Texas.

How Can Physical Education Teachers Contribute to Health Education and Protect Pupils' Health?
Anne Schley Duggan, President, American Association for Health, Physical Education, aand Recreation, N.E.A.; Director of Health and Physical Education, Texas State College for Women, Denton, Texas.

How Can the Programs of Teachers, School Medical Advisers, and School Nurses Be Coordinated?
C. Morley Sellery, Director, School Health Service, Board of Education, Los Angeles, California.

Discussion led by—
Homer W. Anderson, Superintendent of Schools, St. Louis, Missouri.
Edna W. Bailey, Professor of Education, University of California, Berkeley, California.
Charles A. Dukes, Oakland, California.